

## OIB - P-3 Orion 03/22/18 Science Report

**Aircraft:** [P-3 Orion - WFF](#) ([See full schedule](#))

**Date:** Thursday, March 22, 2018

**Mission:** OIB

**Mission Location:** Greenland

**Mission Summary:**

OIB completed the high priority Zig Zag East mission. This mission is a near-repeat of an OIB flight line flown in prior years. It is intended to sample the thick multi-year ice near the Greenland coast as well as the gradient to thinner ice closer to the pole. The eastern and westernmost gradient lines are ICESat-2 ground tracks. In addition to Level 1 Requirements SI1 and SI2, the mission addresses sea ice level 1 baseline requirement SI3b by sampling thick multi-year ice near the northern coast of Greenland and the poleward gradient towards thinner ice. This year the line surveyed parts of an anomalously large polynya northeast of Greenland which was present approximately a month prior to the IceBridge survey, but has since closed up. Evidence of the prior presence of the polynya was seen visually in the form of a higher concentration of smooth ice areas, small sea ice floes, and lack of extensive deformation which is normally seen in the area. Analysis of the processed IceBridge data will be interesting in this area to more thoroughly quantify the impact of the polynya.

Weather along the survey line was good throughout much of the flight, some haze was present along the northern and southern edges of the line but this did not significantly impact the ATM laser returns. Upon the start of the line however both ATM laser systems encountered problems. Problems with the ND filter in the wide-scan system led to questionable data collection for about 20 minutes of data from the start of the line, further analysis of the data will be needed to determine its usefulness. The instrument was repaired on the flight and otherwise operated normally. The dual-color narrow-scan system exhibited a flickering due to a laser triggering issue from a faulty cable for the first 1 hr 20 minutes of the line. The instrument was temporarily repaired several times during the flight to enable good data collection, though dropouts will be present in the data at times. A more permanent solution to repairing the laser for future flights is being sought. All other instruments performed well.

### Data Volumes

ATM T6: 76 Gb  
ATM T7: 82 Gb  
CAMBOT: 56 Gb  
FLIR: 8.6 Gb  
KT19: 10 Mb  
DMS: 61.7 Gb

Snow radar: 862 Gb  
MCoRDS: Calibration data only  
Accumulation radar: No data (sea ice)

Data on: 1311  
Data off: 1720

**Submitted by:** Nathan T. Kurtz on 03/22/18

**File:**

 [zzeast.pdf](#)

**Related Flight Report:**

## P-3 Orion 03/22/18

**Flight Number:** 2018 OIB Arctic -Science #1  
**Payload Configuration:** 2018 OIB Arctic  
**Nav Data Collected:** No  
**Total Flight Time:** 7.8 hours  
**Submitted by:** Janet Letchworth on 03/22/18

**Flight Segments:**

<b>From:</b>	BGTL	<b>To:</b>	BGTL
<b>Start:</b>	03/22/18 10:56 Z	<b>Finish:</b>	03/22/18 18:42 Z
<b>Flight Time:</b>	7.8 hours		
<b>Log Number:</b>	<a href="#">18P008</a>	<b>PI:</b>	Nathan Kurtz
<b>Funding Source:</b>	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
<b>Purpose of Flight:</b>	Science		
<b>Comments:</b>	This was the first science flight of the 2018 Arctic Campaign. The flight line flown was Zig Zag East - a high priority flight over sea ice.		

**Flight Hour Summary:**

	<b>18P008</b>
<b>Flight Hours Approved in SOFRS</b>	201.2
<b>Total Used</b>	190.4
<b>Total Remaining</b>	10.8

**18P008 Flight Reports**

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
<a href="#">03/13/18</a>	2018 OIB Arctic - Airworthiness Test Flight	Other	0.8	0.8	200.4	
<a href="#">03/14/18</a>	2018 OIB Arctic - Project Test Flight - Laser	Other	2.6	3.4	197.8	
<a href="#">03/15/18</a>	2018 OIB Arctic - Project Test Flight - Radar	Other	5.7	9.1	192.1	
<a href="#">03/18/18</a>	2018 OIB Arctic - delta ATF	Other	0.8	9.9	191.3	
<a href="#">03/20/18</a>	2018 OIB Arctic - Transit to Thule	Transit	7.9	17.8	183.4	
<a href="#">03/22/18</a>	2018 OIB Arctic - Science #1	Science	7.8	25.6	175.6	
<a href="#">04/03/18</a>	2018 OIB Arctic - Science #2	Science	7.9	33.5	167.7	
<a href="#">04/04/18</a>	2018 OIB Arctic - Science #3	Science	8.1	41.6	159.6	
<a href="#">04/05/18</a>	2018 OIB Arctic - Science #4	Science	8	49.6	151.6	
<a href="#">04/06/18</a>	2018 OIB Arctic - Science #5	Science	8.8	58.4	142.8	
<a href="#">04/07/18 - 04/08/18</a>	2018 OIB Arctic - Science #6	Science	8.1	66.5	134.7	
<a href="#">04/08/18 - 04/09/18</a>	2018 OIB Arctic - Science #7	Science	8.3	74.8	126.4	
<a href="#">04/14/18 - 04/15/18</a>	2018 OIB Arctic - Science #8	Science	7.7	82.5	118.7	
<a href="#">04/16/18</a>	2018 OIB Arctic - Science #9	Science	8.2	90.7	110.5	
<a href="#">04/18/18</a>	2018 OIB Arctic - Science #10	Science	8	98.7	102.5	
<a href="#">04/19/18</a>	2018 OIB Arctic - Science #11	Science	7.7	106.4	94.8	
<a href="#">04/20/18</a>	2018 OIB Arctic - Transit to Kanger	Transit	4.2	110.6	90.6	

<a href="#">04/21/18</a>	2018 OIB Arctic - Science #12	Science	8.1	118.7	82.5
<a href="#">04/22/18</a>	2018 OIB Arctic - Science #13	Science	6.5	125.2	76
<a href="#">04/23/18</a>	2018 OIB Arctic - Science #14	Science	8.2	133.4	67.8
<a href="#">04/25/18</a>	2018 OIB Arctic - Science #15	Science	7.7	141.1	60.1
<a href="#">04/26/18</a>	2018 OIB Arctic - Science #16	Science	8.8	149.9	51.3
<a href="#">04/27/18</a>	2018 OIB Arctic - Science #17	Science	8	157.9	43.3
<a href="#">04/29/18</a>	2018 OIB Arctic - Science #18	Science	8.3	166.2	35
<a href="#">04/30/18</a>	2018 OIB Arctic - Science #19	Science	9.3	175.5	25.7
<a href="#">05/01/18</a>	2018 OIB Arctic - Science #20	Science	7.4	182.9	18.3
<a href="#">05/03/18</a>	2018 OIB Arctic - Return Transit Leg #1	Transit	6.4	189.3	11.9
<a href="#">05/03/18</a>	2018 OIB Arctic - Return Transit Leg #2	Transit	0.6	189.9	11.3
<a href="#">05/03/18</a>	2018 OIB Arctic - Return Transit Leg #3	Transit	0.5	190.4	10.8

*Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.*

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Bruce A. Tagg

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